

HARD-CORE VS SOFT-CORE ESP IN THE LIGHT OF EDUCATION FORESIGHT

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Abstract. *The paper is devoted to the implications of education foresight prognoses for two major contraposed ESP areas: English for Science and Technology (hard-core ESP, EST) and English for Humanitarian Sciences (soft-core ESP, EHS) taught for adult learners in higher education. In the article the authors quote the mismatch between graduates' qualifications and real demands of the job market reported by employers and analyze the concepts of foresight and education foresight with the prognoses for education as performed as an attempt to eliminate this mismatch. The authors also consider the major trends and content of the most outstanding foresight prognoses and provide arguments of their relevance to the field of ESP teaching. The paper evaluates the relevance, implications and aspects of education foresight prognoses to three major ESP teaching areas: language (linguistic input and communication), didactics (course design and classroom management) and language pedagogy (axiology of ESP learning) in the context of contraposed branches of EST and EHS.*

Key words: *educational foresight, English for Specific Purposes, digitization, English for Science and Technology(EST), English for Humanities (EHS)*

1. INTRODUCTION

The problem raised in the paper is a multidisciplinary one as the goal of this investigation is to answer the question how the existing education foresight prognoses impact the content and methodology in two usually contraposed ESP areas: English for Science and Technology and English for Humanitarian and Social Sciences, i.e. to study the issue bordering sociology, management theory and applied linguistics.

The background of the problem at macro-level is the observable neoliberal trend in higher education which confines to 'commodification of education', i.e. market-oriented approach to education in free market economy and its actualization in education foresight. At micro-level the background incentive for the research was provided by the need to secure best employment options for university graduates through developing such durable skills and fostering such competencies which are required by employers and, what is more important, will be required in near future.

In the overall context of job market required qualifications, the proficiency in English has become one of the first competencies essential for a career in an international company or institution capable of providing jobs targeted by graduates. Closer scrutiny allows to understand that actually employers seek for ESP proficiency and the "commodification trend"

observed and considered by D. Block (2010) is especially true for such sphere of language education as English for Specific Purposes.

Among all English teaching areas ESP is most tightly linked to the world of economics and business due to its targeting the language needed in the occupational or professional spheres. Thus, it is the changes in ESP language and ESP methodology that evoke most instant interest of such stakeholders as HR companies and departments and incentivize research into prospects of their further development.

Globally recognized paradigm shift in social practices brought to light by the spread of digital technologies embraced all spheres of life including education. Worldwide education development programs (UNESCO), a number of initiatives within the European Higher Education Area (EHEA), the Russian Federation education authorities' efforts to face and harness digitization in economy are in full swing but still work-in-progress. Thus, a close-up investigation of the most urgent problems such as the problem of often cited failure of higher education provide a number of competencies demanded the fast-developing and rapidly changing digitizing job market is the matter of first priority.

The need for change is recognized by a number of goals-setting and standardizing documents. The major global political institute of UNESCO defines the strategy of education development through implementing Sustainable Development goal 4 (SDG 4 – Quality Education) and defines this goal in its “Education 2030 Framework for Action” as targeting an increase in *“the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship “by the year 2030 (Sustainable Development Goals. Knowledge Platform, 2015).*

The EU Parliament paper “New Skills Agenda for Europe: Working together to strengthen human capital, employability and competitiveness”, one of the regional reach papers, confirms the importance of competencies in science and necessity of proficiency in foreign languages but at the same time underlines the necessity of the balance between specific professional and transversal skills relevant for unidentified career path: *“... science and foreign languages, as well as transversal skills and key competences such as digital competences, entrepreneurship, critical thinking, problem solving or learning to learn, and financial literacy.” (A New Skills Agenda for Europe, 2016, p.5).* This lack of relevant skills accompanied by the need for transversal skills appeared to be a challenge for ESP and instigated search for optimization.

The solution to the problem was offered by business community representatives, who realized the gap between the standardized educational goals and requirements of economy under the pressure of digitization of economy and exponential information growth and initiated the research into future trends of job market development. Instead of futurology prognoses, vague and considering 50-year prospects, they suggested analysis for shorter time laps and these initiatives were defined as education foresight.

2. RESEARCH METHODOLOGY

The research methodology was built on the multidisciplinary paradigm of contemporary humanitarian research and located in the sphere of convergence of sociology, management theory and applied linguistics. The socio-linguistic nature of the research predetermined the analytical genre of the paper as the task was to embrace the diversity of the influence of such social phenomenon as education foresight on the English language taught for two

contraposed areas of ESP: science and technology and humanitarian and social sciences to a meaningful extent. For this purpose, there have been analyzed the concept of foresight in the management theory and the content of foresight prognoses for education. The major postulates of education foresight were then extrapolated onto the sphere of language education and its key areas of concern language and communication, didactics and language pedagogy were analyzed in the context of EST (as hard-core ESP) and EHS (soft-core ESP).

3. EDUCATION FORESIGHT

3.1. The concept of foresight in the management theory

The concept of foresight is a part of management theory and originated from business practices. This partly explains its sudden popularity in education, as within the overall neoliberal trend in economic development the education establishments became companies providing educational services and entered the competition with other businesses. If for the EU countries it has long been a norm, for some other countries of European Higher Education Area it has not been so relevant until recently. For example, higher education in the Russian Federation has long been absolutely free and the process of commercialization started only after Perestroika, when the higher education fees were introduced as a response to improve the quality of education facilities and faculty's compensation.

English taught in educational establishments appeared to become a part of this commercialization or "commodification" process. According to D. Block, English came to be valued "for what it means in the globalized, deregulated, hyper-competitive, post-industrial 'new work order'" (Block, 2010, p. 294). Other researchers formulated the value of learning English closer to the considered ESP teaching area as "an economic resource to be cultivated for material profit, or acquired as a skill to be offered on the market" (Park & Wee, 2012, p. 125).

The foresight practices were applied by companies' Research and Development departments in order to design a steadfast strategy for sustainable development. To define these practices managerial discourse employed a number of terms: Forecasting (Martino, 1983), Technology Foresight (Anderson, 1997) or just Futures Studies (Porter et al., 2004). The terms have often been used as synonyms as there have not been any meaningful attempts to define the procedures of projecting near future of a business (Ehls, Korreck et al, 2016, p.3).

In 2015 Rohrbeck et al. (2015) undertook analysis of the development of foresight research and concluded that initially foresight was "an isolated task within the organization and primarily an exercise of collecting data and comparing present with planned data through mainly quantitative methods". Later the procedures have become more focused on preparing for possible scenarios which could provide more detailed recommendation for businesses on their further growth and development. The scenario technique or expert-based methods established their positions and "market related orientation has been adopted and experts from academia and industry included" (Ehls, Korreck et al, 2016, p.3).

Although there is no one and only definition of foresight, there is a wide range of its interpretations and "usages of the term" (Amsteus, 2008). Ehls et al. (2016) provide a number of collected definitions of foresight where it is referred to as a tool, process or ability. Among those definitions defining education foresight and its nature two descriptions seem to be most relevant the goal of this research. One belongs to Georghiou (1996) in

which he defines foresight as a tool or “[...] systematic means of assessing those scientific and technological developments which could have a strong impact on industrial competitiveness, wealth creation and quality of life. «Another presents foresight as some ability “[...] ability to see through the apparent confusion, to spot developments before they become trends, to see patterns before they fully emerge, and to grasp the relevant features of social currents that are likely to shape the direction of future events.” (Tsoukas and Shepherd, 2004)

From the angle of the research within language education area the one of the most meaningful points to make concerning the notion of foresight is that it has been recognized as organizational practice capable of making “individuals think about possible future directions” (Cachia et al., 2007). This means that the foresight prognoses serve as proactive interpretation of actions, so foresight receivers and commissioners can not only take note of it in planning, foresight has “its own range of influence – shape the future proactively instead of trying to adapt to unforeseeable futures” (Barker and Smith, 1995). Pragmatics of foresight procedures was in its efforts “to identify the social, political, economic, ecological, and technological factors and trends that are likely to affect the organization in the medium to long run, including the way in which such influence is.” (Ehls, Korreck et al, 2016, p.7). Thus, Rohrbeck (2012) maintains that foresight activities should “result in organizational action and change.”

3.2. Education Foresight Prognoses

As it is seen from Barker and Smith’s definition, proactive views are the nature of foresight prognoses and by delivering a message they influence the course of events. This understanding was adopted by a number of organizations of global and regional recognition which engaged in education foresight.

The foresight community can be subdivided into purely business commissioned, society –commissioned and mixed. There is a number of foresight organization that can be related to the first group. They operate predominantly on-line and conduct foresight research through networking. For example, the Foresight Education and Research Network (FERN) operates as “an online network for people interested in foresight and long term strategic planning” and aims “to promote an understanding of foresight with active projects and by connecting online and offline to foresight opportunities worldwide” (<https://www.fernweb.org/>). The web-site of organization provides assistance to the researchers: e.g. a public directory wiki of the world's best foresight resources (www.globalforesight.org) or a Foresight Guide (<http://www.foresightguide.com/>) which is actually 12-chapter interactive book devoted to various aspects of foresight. Another foresight academic community, namely the team of Imperial Tech Foresight at Imperial College in London, “offers in-house expertise for making long-range forecasts, trend research, media production and access to a network of external practitioners” (<http://www.imperialtechforesight.com/about-us.html>). However, the first distinguishing feature of education foresight is that it is often conducted as a response to social order and, at least explicitly, does not contain commercial component.

In this paper the term education foresight will denote the whole bulk of institutional, organizational and individual discourse existing to characterize further development of higher education under the transformative influence of digital technologies. Although the focus of this discourse, as a rule, does not target the language education issues, nevertheless

it affords extrapolating foresight prognoses onto the area of ESP teaching. Being a part of preparing learners for future life, language education faces the same challenges.

At global level the core of education foresight discourse is represented by UNESCO's Working papers "Education Research and Foresight". Scott (2015), one of the authors of this series, argues that in the 21-st century content and methods of teaching and learning must change due to the transformations that occurred in the society. According to her the drivers of changes are complex and "based on demographics, globalization trends, labour market fluctuations, environmental forecasts, and the pressures of immigration and their consequences for school curricula and pedagogy" (Scott, 2015, p.3.) The dominant role of technologies in these changes determines the need for more complex skills in the more complex world. Redecker et al. (2011) forecasts the future labour market will need more knowledge workers while low-skilled jobs will decline. However, new characteristics of students offer hope that learners will be able to gain these skills as new studentship "work and study online, expect continuous Internet connectivity and web-based services, and regard social networks as vital to their lives" (McLoughlin and Lee, 2010, p. 4). These flexible patterns of learning are a part of one more pillar of education foresight prognoses – the concept of lifelong learning which is seen as the way to facilitate employability in the world of change. For this purpose, it is necessary "to redefine learning outcomes and the way in which we organize and assess learning" [...] (Qingdao Declaration, 2015, p.2).

One of the most radical trends in education foresight is challenging the very existence of formal education, maintaining that on-line learning and MOOCs are likely to replace classical university education in near future (GEF: Agenda, 2014, pp.82-88) As Facer notes many young people are "beginning to question the 'return on investment' of traditional 'high-status' educational routes" (Facer, 2011, p. 25). The ability to find solution on the web through simple trial and error procedure diminishes the value of formal education among the learners who take the acquired in formal education knowledge for granted. Besides with exponentially growing flows of information formal education administration is often unable to provide quick response and introduce innovations into the educational content while availability of new tools for learning and anytime/anywhere allows for doing this. Scott considers this to be one of the reasons for change of education in content and methodology in the 21st century. Due to the fact that technologies facilitated production learners gained the opportunity to get engaged into production and acquire skills they might need in future not only by learning, but by doing (Scott, 2015, pp.5-8).

All these prognoses, however vague, are fully applicable to language education, but ESP context of education foresight discourse is primarily determined by labour market trends, which account for a considerable part in the analyzed discourse of education foresight.

The attempts to forecast future professions are multiple and range from individual prognoses of Alex Ayad in his "Vision.10 years Education Foresight" (Ayad, 2014) to collective efforts of academic and business teams (Atlas of Emerging Jobs,2015).

The labour market trends is the meaningful but not complete content of two remarkable works of P. Luksha and D. Peskov: "Global Education Futures: Agenda" (GEF: Agenda, 2014) and undertaken under their guidance Skolkovo project "Atlas of Emerging Jobs" (Atlas of Emerging Jobs, 2015) which combine social order and with business approach to the problem.

The worth of Atlas for hard-core and soft-core ESP lies in description of cross-professional skills each labelled with an icon, which facilitates indicating their distribution

among industries and reveals in line with the concept of lifelong learning (Atlas, 2015, p.15).

For the needs of research all cross-professional skills were divided into four groups according to the education areas they seem to belong. The first group includes: 1) system thinking and ability to work with complex systems, 2) environmentally conscious thinking, 3) ability to work under high uncertainty and quickly changing conditions and 4) creative potential (Atlas, 2015, p.15). The second group comprises: 1) “multilingual and multicultural abilities (fluent English and knowledge of a second foreign language, understanding of the national and cultural context of partner countries...)” and 2) “cross-industry communication skills (understanding of technologies, processes, and market conditions in different related and unrelated sectors)”. The third group, which was defined as business skills, seems to be most developed and embraces four skills: 1) lean manufacturing, 2) ability to work with teams and individuals, 3) ability to manage projects and processes and 4) ability to address customer’s requests. The fourth one is represented by one complex skill, i.e. IT skills, which if to disintegrate the item, will be presented by programming IT solutions, managing complex automated systems and dealing with artificial intelligence (Atlas of Emerging Jobs, 2015, p.15). The relevance of certain cross-professional skills and their applicability to for a specific case is indicated for future professions in 25 economic sectors (Atlas of Emerging Jobs, 2015, pp.20-28).

This content and aspects of current education foresight discourse and proactive nature of foresight prognoses at all provide considerable reasons to suggest a forthcoming change in content and methodology of ESP in its hard-core and soft-core versions.

4. CONTENT AND METHODOLOGY OF HARD-CORE AND SOFT-CORE ESP IN THE LIGHT OF EDUCATION FORESIGHT

4.1. Fundamentals or Absolute Characteristics

The influence of technologies on education has shaken the grounds of ESP as well as other English Language teaching areas. Although different aspects of practical use of technologies in ESP teaching and learning has recently attracted a great deal of academic interest (Dashtestani & Stojković, 2017; Burkšaitienė & Selevičienė 2017, Kirovska-Simanjoska, 2017), the most fundamental changes brought by these technologies into ESP still remain insufficiently processed and require further analysis.

These fundamentals are related to the concept of absolute and variable characteristics of ESP (Stevens, 1988; Dudley-Evans & St John, 1998). Hypothetically, these are being absolute characteristics of ESP that should radically change in the light of education foresight in hard-core and soft-core ESP versions.

Let us undertake the analysis of education foresight of most salient characteristics. The first absolute characteristic of ESP is that the course should be designed to meet specified needs of the learner. To what extent it is true in the context of a learners’ interests in global employment? Or the concept of transversal skills or cross-professional skills capable to provide smooth transition for career change predicted by the foresight visionaries in the 21st century within lifelong learning paradigm? To what extent is it relevant for both considered ESP fields?

The objects of this research science and technology based hard-core and humanities-based soft-core ESP should provide the grounds for analysis.

The anthropocentric approach of W. Dilthey, an outstanding German historian and hermeneutic philosopher, substantiates the division of science and humanities on the grounds of the object domain. Science according to him is concentrated on external to human being phenomena, while humanities mission is to study internal experiences, goals and values of a human being (Dilthey, 2001). Nonetheless, the Russian philosopher and epistemologist Vladimir Il'in emphasizes the unity and "generic uniformity of science" and metaphorically states that "science and humanities are eating the same dish, but from different ends and by different spoons" (cited in Komarova, 2017, p.328). Generally, proximity of both epistemological patterns lay the ground for common features and common linguistic input of teaching hard-core and soft-core ESP.

The analysis of Strevens-Dudley-Evance ESP absolutes, although affords to agree that ESP should be "centered on the language appropriate" to professional activities (EOP or EPP part), but raises the question about the nature of these activities. If the nature of this activities in the heavily digitized environment changed for both and is followed by the emergence of completely new professions and occupations, where are the frontiers to this appropriate to a professional discourse language. Following F.de Saussurean understanding of the language as a system of mutually interrelated signs and its further development in social semiotics, verbalized social changes will be relevant for both ESP teaching fields.

Later Dudley-Evans and St. John 's definition of ESP declaration of more focus on methodology and not mentioning the contrast between ESP and EGP (Dudley-Evans and St. John, 1998, pp. 4-5) seems to have also lost its absolute relevance to contemporary ESP transformed by the societal changes brought by digital age. Laborda and Litzler's in their research on current perspectives for teaching English for Specific purposes conclude that one of the aspects of further research in ESP should be linked to the use of technologies (Laborda and Litzler, p.47)

The new reality generated by technologies in the life of 21st century is described in Luksha and Peskov's "Global Education Futures: Agenda" (GEF: Agenda, 2014). GEF describes extensive development of the Internet, the role of digital environment as an agent of human activity, virtualization of production and services, cognitive revolution new technologies as social factors that will revolutionize regular lifestyles (GEF: Agenda, 2014, pp.25-36) and extrapolates these trends on education in general and offers some education solutions based on technologies (p.37).

This view is echoed by other researchers. For instance, Gatehouse maintains that one of the main characteristics of ESP is "learning how to access information in a new culture" (Gatehouse,2001). If in 1998 Dudley-Evans and St. John distinguished such variable characteristics as relation to a specific discipline or specific teaching situation, today almost 20 years past in the light of education foresight the variety will be in the tools, i.e. technologies.

Within the framework of this understanding the variables of both considered ESP fields will be dependent on the general context of future advancements. Hutchison-Waters "what, how and why" as the main ESP pillars determined the aspects of examining education foresight impact on EST and EHS and, thus, focused on: 1) language and communication(what),2) didactics(how) and 3) language pedagogy(why).

4.2. The variables

4.2.1. *Language and Communication*

The education foresight impact on two major parts of ESP can be evaluated in two major aspects: 1) the impact of education foresight that is being implemented and if not systematically, at least sporadically and 2) the impact of education foresight on both versions of ESP that has not been implemented yet, but there are signs of the possibility of these innovations.

The first aspect of education foresight implementation is intensifying of digital component in the content of the course. Avatarization of service providers, biofeedback technologies, artificial intelligence, Big Data or the Internet of things do not only modify everyday life, but raise new concurrent problems for ESP. In particular, new social practices are embraced by the language system verbally and simultaneously these technology-based practices penetrate the areas of concern- ESP teaching in our research. The social nature of “digital” discourse translates it into relevant linguistic content for specialists in both fields and necessitates integrating this content into developing of all Greater Skills (reading, writing, speaking and listening) as well as in all types of activities from drills to discussions. Thus, the impact of foresight prognoses on both areas of ESP will promote re-designing the courses and centering them upon the use of technologies by commoners and professionals in science and humanities.

The differences between hard-core and soft-core ESP is seen to be located in EOP areas with more attention to the use of augmented reality for modeling machines and devices in EST and on-line linguistic corpora or RSS-feeders for EHS. For both areas technology-rich environment raises the issue of the necessity to foster a new kind of linguistic competence: English language proficiency adjustable to this environment. In terms of linguistic competence, it is to require more focus on text compression and decompression, ellipses and teaching netspeak, at least as a part of passive vocabulary, because accepted globally netspeak conventions have already secured their position in web-mediated intercultural communication and, due to it, are to be learnt as a linguistic fact.

Recognizing the fact of accelerating life pace, a sound ESP methodology should make use of communicative environment of instant messaging, individual on-line banking and social-networking necessitate ESP learning activities involving this environment. Thus, science and technology and humanitarian students should practice their linguistic knowledge through messaging, skypeing, using Viber, What’s Up, Telegram and Instagram are to be placed into the context of EOP, i.e. be meaningful for professional intercultural communication.

At the background of the ESP content-based approach, education foresight impacts English as a Medium of Instruction, because communicative approach implies student-teacher dialogue in the targeted language. This entails the necessity of developing and acquiring of a specific domain of teacher’s talk for managing computer- and web-based learners’ operations in the classroom and the correspondent vocabulary for learners (Zubova, 2017, pp.108-110).

The second aspect of education foresight implication onto teaching ESP is based on the theses of GEF and Atlas of Emerging jobs as the reflection of the empirically observed tendencies fixed in the written form.

One of these cross-professional competences formulated by the team of Skolkovo project “Atlas of Emerging Jobs” which was classified in this paper as a related to language education is desired multilingualism. The “multilingual abilities” are interpreted

by the authors as “fluent English and knowledge of a second foreign language”. In the partnering work “Global Education Futures: Agenda” Luksha and Peskov observe the role of Asian countries and their cultures’ position in contemporary economic environment. The paper maintains that “Asia’s new role in the global economy and culture could have an unexpected impact on the future of education” and provide several reasons for this change. The first reason is seen in fast urbanization and concentration of population in Asian cosmopolitan cities and the authors argue that these cities “will inevitably become the centers of new urban culture”. Therefore, we can expect a change in «global cultural space through interventions of Asian cultural content and practices”. The second reason is the role of these cities as global technology leaders and their “strive for a new place in the global division of labour”. The authors also invite the readership to consider the facts of different education systems and values, seeing them as a challenge for global education architecture (GEF: Agenda, 2014, p.71-72). Extrapolating this on ESP teaching one should extend the expressed concerns to LSP dimension and stipulate the necessity of studying an Oriental Language as the second foreign language. However, in ESP context English-Chinese or English -Arabic linguistic confrontations might be built into ESP teaching, at least in the terminology field (e.g. extending linguistic thinking of learners through matching or odd-one-out activities providing professional terms or describing some operation in English and transliterated Chinese or Arabic).

One more linguistic advancements in ESP might become learning basics of a popular computer-programming languages for translating some of the imperatives for machines. Getting back to cross-professional skills defined by “Atlas of Emerging Jobs” the group of IT-skills declares necessity to be capable of “programming IT solutions” and “dealing with artificial intelligence”. This implies knowledge of computer languages that have traditionally been taught exclusively to computer programmers is no longer only computer programming property (See “Digital Skills and Job Coalition web-site). The popularization of computer languages has already started at institutional level (See European Union initiatives) and by Internet industry. An interactive online platform Codecademy started to offer free coding classes in twelve different programming languages. Coding courses can be found at Coursera (<https://ru.coursera.org/learn/intro-programming>), Udacity (<https://ru.coursera.org/learn/intro-programming>). Coupled with the prospects of managing machines and dealing with artificial intelligence this suggests that basics of computer languages might be learnt together with natural languages. With all that EST can be taught with heavier emphasis on formulating imperatives for managing machines, while linguists can consider the basics of correlation between artificial and authentic languages. Thus, building bridges between computer and natural codes of communication might also become a new ESP trend.

4.2.2. *Didactics*

Although didactics and pedagogy are often viewed as synonyms and inseparable parts of education, in this paper they are considered as independent fields: the first as the theory of teaching and learning (W. Ratke, J. Comenius, J. Herbart) and the second as the theory of upbringing and personal development (J.J. Rousseau, J. H. Pestalozzi, A.W. Diesterweg). The first concept implies techniques used by a teacher to build knowledge and manage the education process, while the second is viewed as practices of inculcating moral values and dealing with ethical issues integrated in personal development.

Comparing EST and EHS didactics one would definitely find unifying ESP invariables underlying studying English within the either context. However, the first category of didactics – goal-setting will definitely draw a meaningful border between the first and the second in terms of structural approach. EST would focus on simple structures and complex terminology, while EHS is not so strict on terminology issues and would sooner strive for complex structures and vocabulary as humanities as sciences are more about subtleties of states, feelings and emotions which require more descriptive vocabulary and more patterns to display these shades.

To analyze the implications of education foresight for ESP didactics as most of ESP researchers it would be reasonable to concentrate on four main perspectives of ESP: needs analysis, language analysis, materials and methods and assessment.

In the light of education foresight, the procedures of needs analysis seem to fail to meet the employments needs (Hampson, Patton and Shanks, 2011) and, therefore, should be redesigned with the view of digital job market requirements and the predicted future jobs (Atlas of Emerging professions, 2015; Ayad, 2014, New Skills for Europe, 2016). The language analysis and material selection will involve processing discourse of technology-rich environment.

The most ground-shaking changes are to occur in the field of method. Education foresight focus on technological advancements provides for new methodology. Luksha and Peskov (2014) in their “list of education solutions based on new technologies” define the “principal processes” in the development of “learning and mentoring”. The first principal process they insist on is gradual replacement of traditional classroom teaching by automated teaching, which according to them will be beneficial as it would “reduce the access price to education standards” and through automatic systems monitoring progress of the learners will make this learning truly individualized (Luksha & Peskov, 2014, p.39). The implications of this for both ESP fields are congruent and require no commentaries. Although the authors of Global Education Futures prioritize technology-based assessment as the guarantee of more efficient learning (p.41), more exciting in the context of ESP learning are the prospects to employ biofeedback devices, which can recommend time periods for learner’s better acquisition through blood pressure or sugar level analyses (Luksha& Peskov, 2014, p.33).

One more problem raised by education foresight prognoses regarding life-long learning is epistemological one, because in the context of exponentially growing information knowledge loses its ultimate value under the pressure of new scientific facts. Here, it could be hypothesized that studying English for humanities may be less concerned with the problem while science and technology English will, presumably, more often suffer the need for change, but the statement requires more profound research.

Another innovative feature of EST/EHS teaching is the required skill of “cross-industry communication” which implies “understanding of technologies, processes, and market conditions in different related and unrelated sectors”. While it will be difficult to suggest any particular language input for developing this skill, with a certain extent of confidence, one can predict that methodology will be focused on compensation strategies (i.e. wide use of definitions, guessing through context, prompting etc.).

4.2.3. Pedagogy

Pedagogy as the aspect of EST and EHS learning seem to have been most modified in the education foresight prognoses. Hutchison-Waters ESP teaching principle “what, how

and why”, to the author’s view, was primarily followed in its what-and-how part, while the most important “why” part has been often neglected. This unwillingness of the course designers or busy teachers to uphold the rationale of learning English for career goals resulted in a formal approach of following rigid framework of curriculum – learning structures and lexis or even L. Trimble’s “rhetoric movements” without proper reference to vibrancies and lifeblood of authentic professional discourse and undergraduates’ future careers and employability issues.

First of all, the question “why” finds the answer in the job market needs and explains the reasons for studying professionally-oriented English. The EU Parliament paper “New Skill Agenda: Working together to strengthen human capital, employability and competitiveness” points to striking skills gaps and mismatches. According to it “40% of European employers have difficulty finding people with the skills they need to grow and innovate. The reason for this lies in the fact the “education providers on the one hand and employers and learners on the other have different perceptions of how well prepared graduates are for the labour market” (New Skills Agenda, 2016).

As it was mentioned before, proficiency in English is an educational value of language pedagogy of ESP as it serves a meaningful component of career success and a voucher for successful employment. If at early stages of industrial society, the level of expertise including language proficiency was secured by the system of re-training of cadres and advancement of qualifications training courses, in future this need for up-grading knowledge and skills will be intensified by the spread of digital technologies (Scott, 2015) and such up-grading courses will have become a part of everyday life-styles. Technologies will provide for individual learning with everyone finding their own education trajectories. Herring believes that “technology-enabled informal learning” will facilitate “self-directed, personalized learning” and eventually could eliminate skills gaps and mismatches (Herring, 2012, p.1).

Regarding learning English as an acquiring a competence radically increasing the value of a specialist for the job market there should be noted some other changes in educating professionals living in a market-driven economy. The one who wants to be financially successful should be prepared for business activities. The group of business skills in the list of cross-professional skills proposed by “Atlas of Emerging Jobs” can easily be extrapolated onto the practice of ESP teaching in both focused areas. For example, traditional ELT practice of discussing subjects in groups or in pairs fosters the ability to work with teams and individuals and project ESP methodology facilitates the development of the ability to manage projects and processes. Lean manufacturing as business optimization process, which has always been the subject area for EST discussions, in the content of a soft-core design may confine to the principle of efficient research planning, i.e. time management in EHS course. The “ability to address customer’s requests” involves knowledge of psychology and greater extent of empathy that also can be trained at the ESP lessons.

The same is true for promoting creativity in students. Goodman and Dingly (2017) argue that “creative abilities” of employees have been recently intensively sought and desired by employers. If until recently creativity was seen only as the way to promote motivation in learning in the light of education foresight it becomes a skill to be fostered. Confirming Scott’s thesis that in 21st century learners will shift from consumers to producers, the easy modes of creating PowerPoint presentations or “movies” uploading personal digital photos into Windows Moviemaker or similar services help learners tap

their creativity: EHS students can create brand new presentations of their research, while ES students can use augmented reality to reproduce machines and their parts.

5. CONCLUSION

All things considered allow us to conclude that in the light of education foresight both hard-core and soft-core ESP are transformed by the reported by education foresight papers labour market trends (skills gap, need for more qualified workforce, need for cross-professional skills), which in their turn have been subjected to change due to the penetration of digital technologies in all spheres of social life.

Due to these trends the absolutes of ESP should be extended and embrace focus on future employment issues. For this purpose, language and communication should be transformed in line with social changes, methods of teaching should involve more activities based on web-based patterns of communication and individual learning should be encouraged to manage the exponential growth of information. The second foreign LSP to study might become an Oriental language and new ESP might need to design activities contrasting English vs Oriental Language and English vs artificial computer languages.

Personal development of learners at ESP lessons for science and humanities in the light of education foresight would focus on fostering business skills and developing creativity.

Finally, it should be resumed that some propositions made in this paper might need some further, more extended and profound research involving wider range of practitioners would contribute to academic standards of development of ESP theory.

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